OHS12385

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MDL INFORMATION SYSTEMS, INC.
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1-615-366-2000

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: L-ASCORBIC ACID

TRADE NAMES/SYNONYMS:
VITAMIN C; L-XYLOASCORBIC ACID; CEBIONE; ASCORBUTINA; ANTISCORBUTIC VITAMIN; CEVITAMIC ACID; ALLERCORB; ASCORIN; VITACIN; LAROSCORBINE; XITIX; CANTAN; (+)-ASCORBIC ACID; CETEMICAN; L-(+)-ASCORBIC ACID; L-LYXOASCORBIC ACID; PROSCORBIN; TESTASCORBIC; A-61; BP-351; 3-KETO-L-GULOFURANOLACTONE; OHS12385; RTECS CI7650000

CHEMICAL FAMILY: carboxylic acids, alicyclic

CREATION DATE: Dec 21 1984
REVISION DATE: Mar 22 2001

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: L-ASCORBIC ACID
CAS NUMBER: 50-81-7
EC NUMBER (EINECS): 200-066-2
PERCENTAGE: 100

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=0 FIRE=1 REACTIVITY=0

EMERGENCY OVERVIEW:
CHANGE IN APPEARANCE: darkens on exposure to light
COLOR: white to yellow
PHYSICAL FORM: crystals, crystals, flakes, powder
ODOR: odorless
MAJOR HEALTH HAZARDS: No significant target effects reported.
PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: chest pain
LONG TERM EXPOSURE: no information is available
SKIN CONTACT:
SHORT TERM EXPOSURE: mild irritation
LONG TERM EXPOSURE: no information is available
EYE CONTACT:
SHORT TERM EXPOSURE: mild irritation
LONG TERM EXPOSURE: no information on significant adverse effects
INGESTION:
SHORT TERM EXPOSURE: digestive disorders, blood disorders
LONG TERM EXPOSURE: no information on significant adverse effects

CARCINOGEN STATUS:
OSHA: No
NTP: No
IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight fire hazard. Dust/air mixtures may ignite or explode.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire.

Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

LOWER FLAMMABLE LIMIT: 0.70 g/L (optimum)
UPPER FLAMMABLE LIMIT: >=0.35 g/L
AUTOIGNITION: 1220 F (660 C)

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store in a tightly closed container. Avoid contact with air or light. Store in a cool, dry place. Store in a well-ventilated area. Keep separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
L-ASCORBIC ACID:
No occupational exposure limits established.

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
Any dust, mist, and fume respirator.

Any air-purifying respirator with a high-efficiency particulate filter.
Any powered, air-purifying respirator with a dust, mist, and fume filter.
Any powered, air-purifying respirator with a high-efficiency particulate filter.

For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: solid
COLOR: white to yellow
CHANGE IN APPEARANCE: darkens on exposure to light
PHYSICAL FORM: crystals, crystals, flakes, powder
ODOR: odorless
TASTE: acid taste
MOLECULAR WEIGHT: 176.13
MOLECULAR FORMULA: C6-H8-O6
BOILING POINT: Not applicable
MELTING POINT: Not available
DECOMPOSITION POINT: 374-378 F (190-192 C)
VAPOR PRESSURE: Not applicable
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY (water=1): 1.65
WATER SOLUBILITY: 33%
PH: 3 (0.5% solution)
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Slightly Soluble: alcohol
Insoluble: ether, chloroform, benzene, petroleum ether, oils, fats, fat solvents

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

INCOMPATIBILITIES: acids, bases, metals, oxidizing materials

L-ASCORBIC ACID:
ACIDS (STRONG): Incompatible.
ALKALIES: Incompatible.
ALUMINUM: Solutions may release explosive hydrogen gas.
COPPER: Oxides Vitamin C rapidly.
IRON: Solutions may release explosive hydrogen gas.
OXIDIZERS (STRONG): Fire and explosion hazard.
ZINC: Solutions may release explosive hydrogen gas.

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: oxides of carbon

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

L-ASCORBIC ACID:
TOXICITY DATA:
2300 mg/kg/2 day(s) intravenous-man TDLo; 900 mg/kg intravenous-woman LDLo; 11900 mg/kg oral-rat LD50; >10 gm/kg subcutaneous-rat LD50; >4 gm/kg intravenous-rat LD50; 3367 mg/kg oral-mouse LD50; 643 mg/kg intraperitoneal-mouse LD50; 518 mg/kg intravenous-mouse LD50; 455 gm/kg/13 week(s) continuous oral-rat TDLo; 546 gm/kg/13 week(s) intermittent oral-mouse TDLo
ACUTE TOXICITY LEVEL:
Slightly Toxic: ingestion
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: blood system disorders, gastrointestinal disorders, hormonal disorders, metabolic disorders, skin disorders and allergies
MUTAGENIC DATA:
mutation in microorganisms - Salmonella typhimurium 500 ug/plate (+/-S9); DNA damage - Bacillus subtilis 2 mg/disc; mutation in microorganisms - other microorganisms 1000 ppm (-S9); mutation in microorganisms - Neurospora crassa 2 mmol/L (-S9); DNA repair - Saccharomyes cerevisae 100 mg/L; gene conversion and miotic recombination - Saccharomyes cerevisae 300 mg/L; sex chromosone loss and non disjunction - Saccharomyes cerevisae 100 mg/L; sperm - silkworm parenteral 25 ug; DNA damage - human fibroblast 200 umol/L; DNA damage - human other cell types 200 umol/L; DNA inhibition - human HeLa cell 2500 umol/L; DNA inhibition - human other cell types 200 umol/L; other mutation test systems - human fibroblast 200 umol/L; other mutation test systems - human other cell types 200 umol/L; DNA inhibition - human other cell types 200 mg/L; micronucleus test - mouse intraperitoneal 4500 mg/kg 3 day(s)-continuous; other mutation test systems - mouse liver 500 umol/L; cytogenetic analysis - mouse intraperitoneal 1600 mg/kg; sister chromatid

exchange - mouse intraperitoneal 1600 mg/kg; micronucleus test - hamster ovary 400 mg/L; cytogenetic analysis - hamster ovary 300 mg/L; sister chromatid exchange - hamster ovary 500 mg/L; DNA damage - mammal lymphocyte 500 umol/L

REPRODUCTIVE EFFECTS DATA:
2500 mg/kg oral-rat TDLo 1-22 day(s) pregnant female continuous; 6680 mg/kg intraperitoneal-mouse TDLo 11 day(s) pregnant female continuous; 800 mg/kg intravenous-mouse TDLo 8 day(s) pregnant female continuous; 19500 mg/kg oral-guinea pig TDLo 30-58 day(s) pregnant female/10 day(s) post pregnancy continuous; 5800 mg/kg oral-guinea pig TDLo 1-58 day(s) pregnant female continuous; 2471 mg/kg oral-guinea pig TDLo multigenerations

ADDITIONAL DATA: May cross the placenta. May be excreted in breast milk. Interactions with drugs may occur.

HEALTH EFFECTS:

INHALATION:

ACUTE EXPOSURE:

L-ASCORBIC ACID: Inhalation may cause mild mucous membrane irritation, coughing and chest discomfort.

CHRONIC EXPOSURE:

L-ASCORBIC ACID: No data available.

SKIN CONTACT:

ACUTE EXPOSURE:

L-ASCORBIC ACID: Contact may cause mild irritation.

CHRONIC EXPOSURE:

L-ASCORBIC ACID: No data available.

EYE CONTACT:

ACUTE EXPOSURE:

L-ASCORBIC ACID: Contact may cause mild irritation.

CHRONIC EXPOSURE:

L-ASCORBIC ACID: Repeated application of a 10% solution to the eyes of patients caused no injury.

INGESTION:

ACUTE EXPOSURE:

L-ASCORBIC ACID: Ingestion of large doses may cause gastrointestinal irritation including nausea and diarrhea, particularly when consumed on an empty stomach. Blood disorders such as Heinz body formation may occur with high doses or if an infection is present. Hemolysis in G-6-phosphate dehydrogenase deficient individuals has been reported.

CHRONIC EXPOSURE:

L-ASCORBIC ACID: Humans have consumed 40 gm/day for a month or 100 gm/day

for a few days without obvious symptoms. Repeated ingestion of large doses of Vitamin C may precipitate oxalate, urate or calcium stones in the kidneys or bladder. Rebound scurvy has been reported in infants of mothers taking high doses of Vitamin C. A precipitous reduction in serum Vitamin C levels due to an altered regulatory mechanism following prolonged ingestion of massive doses may also result in rebound scurvy. Dental errosion has been reported in an individual who took high daily doses of chewable Vitamin C for 3 years. Vitamin C is excreted in human breast milk and nursing infants may be affected by large doses. Effects on the newborn and female fertility have been reported from ingestion during pregnancy in guinea pigs and rats.

SECTION 12 ECOLOGICAL INFORMATION

Not available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: No
CHRONIC: No
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:
EC CLASSIFICATION (CALCULATED): Not determined.

EC RISK AND SAFETY PHRASES:
R 64 May cause harm to breastfed babies.

GERMAN REGULATIONS:
WATER HAZARD CLASS (WGK):
STATE OF CLASSIFICATION: Annex 3
CLASSIFICATION UNDER HAZARD TO WATER: 0

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

SECTION 16 OTHER INFORMATION